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The Connecticut Agricultural Experiment Station, New Haven

Seed Germination and Purity Analysis - 2005

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Official samples of 342 vegetable, 16 lawn, and 5 crop seeds were collected by inspectors from the Bureau of Regulation and Inspection of the Connecticut Department of Agriculture for testing in 2005. As the official seed testing laboratory, The Connecticut Agricultural Experiment Station performed germination and purity analyses for compliance with the Connecticut Seed Law Regulations and the Federal Seed Act.

Table 1 shows the results of germination tests for individual vegetable seed samples from 12 companies. Results are presented by plant type, variety, germination found, germination standard, and compliance with the standard. Germination standards are set by the Federal Seed Act, although this year some companies had higher label claims than the standard. The categories for label compliance are: 1) seeds meet label claims for germination and 2) seeds do not meet label claims for germination within allowable tolerance. Tests were replicated twice. In addition, seedlings must also appear "normal", i.e., they have to be free from decay, have well-developed primary root systems, have well-developed and intact hypocotyls and/or epicotyls, and have healthy cotyledons. Of the 342 vegetable seed samples tested, four did not meet their label claims for germination. Two samples were retested and failed the second test. Two samples were not retested because of insufficient numbers of seeds. Seed samples were also examined for prohibited noxious weed seeds. No vegetable samples contained weed contaminants.

The total number of germination claims and the percentage of claims that met or failed label claims are summarized for each vegetable seed company in Table 2. In some cases, specific label claims were higher than federal seed standards. Table 3 summarizes the total number of samples tested and the average germination for each type of vegetable.

Table 4 shows the results of purity and germination tests for individual lawn grass seed samples. These are presented by company, brand name and/or seed type or variety mixture. The categories for both purity and germination are as previously described for vegetable seeds. Lawn seed samples that were labeled with several varieties within a species or with several species within a genus were separated by genus. Purity and germination results are therefore reported as the sum for that genus. The label claim is met as long as this sum equals or exceeds the sum of the individual components for a genus listed on the label. One of the 16 lawn seed samples tested met label claims for both purity and germination. Three samples failed label claims for both purity and germination. Twelve samples passed label claims for germination but did not meet claims for purity.

Table 5 shows the results of purity and germination tests for crop seed samples. Four of the five samples met label claims for germination and purity. One sample passed label claims for germination but did not meet label claims for purity because of excessive weed seed. In addition to germination and purity tests, samples were also examined for prohibited noxious weeds. No noxious weeds were found in any of the samples.

Mary K. Inman and Dr. Sharon M. Douglas performed the analyses. Alton A. Blodgett, Seed Control Official, and Wayne S. Nelson collected the samples. The Seed Law is administered by the Seed Control Official for the Commissioner of the Department of Agriculture.

Sharon M. Douglas

Table I. Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Asparagus	Mary Washington	Comstock, Ferre and Company	70	89
Asparagus bean		W. Atlee Burpee and Company	75	99
Bean	Blue Lake Bush	Charles C. Hart Seed Company	70	92
Bean	Commodore	Charles C. Hart Seed Company	70	97
Bean	Golden Butterwax	Agway, Inc.	70	97
Bean	French's Horticultural	Agway, Inc.	70	95
Bean	Brittle Wax	W. Atlee Burpee and Company	70	95
Bean	Bush Romano #26	Walmart Gardens/Ferry Morse Seed Co.	70	95
Bean	Kentucky Wonder Pole	Walmart Gardens/Ferry Morse Seed Co.	70	95
Bean	Purple Queen Bush	Martha Stewart Living Omnimedia Inc.	70	98
Bean	Dragon's Tongue Wax Bush	Martha Stewart Living Omnimedia Inc.	70	96
Bean	Jade Stringless	New England Seed Company	70	90
Bean	Cherokee Wax	New England Seed Company	70	97
Bean	Kentucky Wonder Wax Pole	Comstock, Ferre and Company	70	84
Bean	Derby	Comstock, Ferre and Company	70	92
Bean	Taylor's Dwarf Horticultural	Comstock, Ferre and Company	70	92
Bean	Blue Lake Bush	Livingston Seed Company	70	95
Bean	Provider	High Mowing Seeds Certified Organic	80+	99
Bean, lima	Fordhook	Charles C. Hart Seed Company	70	58*
Bean, lima	Baby Bush, Organic	W. Atlee Burpee and Company	70	80
Bean, lima	Buttergreen	Martha Stewart Living Omnimedia Inc.	70	81
Bean, lima	Jackson Wonder	Comstock, Ferre and Company	70	99
Beet	Lutz Green Leaf	Charles C. Hart Seed Company	65	81
Beet	Early Wonder	Agway, Inc.	65	97
Beet	Detroit Dark Red	Agway, Inc.	65	97
Beet	Detroit Dark Red	Excel Seeds	65	92
Beet	Detroit Dark Red	W. Atlee Burpee and Company	65	91
Beet	Tall Top Early Wonder	Walmart Gardens/Ferry Morse Seed Co.	65	95
Beet	Chiogga	Martha Stewart Living Omnimedia Inc.	65	86
Beet	Early Wonder Green Top	New England Seed Company	65	90
Beet	Burpee Golden	Comstock, Ferre and Company	65	89
Beet	Detroit Dark Red	Livingston Seed Company	65	93
Beet	Early Wonder Tall Top	High Mowing Seeds Certified Organic	80+	89
Broccoflower	Broccoverde	New England Seed Company	75	97
Broccoli	Waltham	Charles C. Hart Seed Company	75	97
Broccoli	Southern Comet	Agway, Inc.	75	92
Broccoli	Waltham 29	Excel Seeds	75	96
Broccoli	Flash Hybrid	W. Atlee Burpee and Company	75	95
Broccoli	Green Goliath	Martha Stewart Living Omnimedia Inc.	75	97
Broccoli	Calabrese	American Seed	75	96
Broccoli	Calabrese Green Sprouting	Livingston Seed Company	75	95
Broccoli	De Cicco	High Mowing Seeds Certified Organic	80+	99
Broccoli raab	Early Pugliese	New England Seed Company	75	84

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Broccoli raab	Spring	Comstock, Ferre and Company	75	96
Brussels sprouts	Long Island Improved	Charles C. Hart Seed Company	70	92
Brussels sprouts	Catskill	Walmart Gardens/Ferry Morse Seed Co.	70	89
Brussels sprouts	Long Island Improved	Comstock, Ferre and Company	70	86
Cabbage	Late Flat Dutch	Charles C. Hart Seed Company	75	82
Cabbage	King's Ransom	Agway, Inc.	75	96
Cabbage	Earliana	W. Atlee Burpee and Company	75	97
Cabbage	Ferry's Round Dutch	Walmart Gardens/Ferry Morse Seed Co.	75	95
Cabbage	Early Golden Acre	American Seed	75	92
Cabbage	Dynamo	New England Seed Company	75	90
Cabbage	Couve	Comstock, Ferre and Company	75	91
Cantaloupe	Classic	Agway, Inc.	75	100
Cantaloupe	Breakfast Longkeeper	W. Atlee Burpee and Company	75	100
Cantaloupe	Delicious 51	Carolina Seeds, Division of New England Seed	90+	98
Cantaloupe	Iroquois	Comstock, Ferre and Company	75	98
Cantaloupe	Honey Rock	Livingston Seed Company	75	98
Carrot	Imperator	Charles C. Hart Seed Company	55	81
Carrot	Danvers Half Long	Charles C. Hart Seed Company	55	74
Carrot	Yellowstone	Agway, Inc.	55	79
Carrot	Royal Chantenay	Agway, Inc.	55	76
Carrot	Danvers 126	Excel Seeds	55	73
Carrot	Short 'n Sweet	W. Atlee Burpee and Company	55	80
Carrot	Chantenay, Organic	W. Atlee Burpee and Company	55	85
Carrot	Red Cored Chantenay 7317B	Walmart Gardens/Ferry Morse Seed Co.	55	86
Carrot	Nantes Half Long	Martha Stewart Living Omnimedia Inc.	55	75
Carrot	Danvers Half Long	American Seed	55	88
Carrot	Coreless Nantes	New England Seed Company	55	72
Carrot	Kuroda	Carolina Seeds, Division of New England Seed	85	85
Carrot	Gold Pak	Comstock, Ferre and Company	55	87
Carrot	Little Finger	Comstock, Ferre and Company	55	59
Carrot	Nantes	Livingston Seed Company	55	77
Carrot	Danvers 126	High Mowing Seeds Certified Organic	80+	83
Cauliflower	Snow Crown	Agway, Inc.	75	93
Cauliflower	Early White Hybrid	W. Atlee Burpee and Company	75	92
Cauliflower	Early Snowball	New England Seed Company	75	86
Celery	Golden Pascal Self Blanching	Carolina Seeds, Division of New England Seed	85+	78
Celery	Golden Self Blanching	Comstock, Ferre and Company	55	90
Chicory	Cicoria Catalogna	New England Seed Company	65	85
Chicory	Rossa Italiko	Comstock, Ferre and Company	65	86
Chinese cabbage	Bok Choi	Charles C. Hart Seed Company	75	90
Chinese cabbage	Jade Pagoda	Agway, Inc.	75	93
Chinese cabbage	Orient Express	Martha Stewart Living Omnimedia Inc.	75	81

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Chinese cabbage	Michili	New England Seed Company	75	92
Collards	Georgia Green	Charles C. Hart Seed Company	80	88
Collards	Vates	Agway, Inc.	80	89
Collards	Georgia	W. Atlee Burpee and Company	80	97
Collards	Georgia	New England Seed Company	80	95
Collards	Top Bunch	Carolina Seeds, Division of New England Seed	93	84
Collards	Georgia	Comstock, Ferre and Company	80	93
Corn	Sunglow	Charles C. Hart Seed Company	75	98
Corn	Sugar and Gold	Charles C. Hart Seed Company	75	97
Corn	Butter and Sugar	Charles C. Hart Seed Company	75	99
Corn	Silver Queen	Charles C. Hart Seed Company	75	98
Corn	Ecstase II	Agway, Inc.	75	98
Corn	Silver Millenium	Agway, Inc.	75	92
Corn	Honey and Cream	W. Atlee Burpee and Company	75	99
Corn	Early Choice	W. Atlee Burpee and Company	75	99
Corn	Golden Cross Bantam	Walmart Gardens/Ferry Morse Seed Co.	75	98
Corn	Breeders Bicolor Hybrid	Martha Stewart Living Omnimedia Inc.	75	98
Corn	Breeders Choice Hybrid	Martha Stewart Living Omnimedia Inc.	75	87
Corn	Quickie	New England Seed Company	75	98
Corn	Butter and Sugar	Comstock, Ferre and Company	75	99
Corn	Ashworth	High Mowing Seeds Certified Organic	80+	81
Cornsalad	Mache	Martha Stewart Living Omnimedia Inc.	70	77
Cowpea	Pinkeye Purple Hull	Walmart Gardens/Ferry Morse Seed Co.	75	93
Cucumber	Marketmore 86	Charles C. Hart Seed Company	80	99
Cucumber	Bush Pickle	Charles C. Hart Seed Company	80	98
Cucumber	Wisconsin SMR-58	Agway, Inc.	80	98
Cucumber	Straight 8	Agway, Inc.	80	93
Cucumber	National Pickling	Excel Seeds	80	90
Cucumber	Picklebush	W. Atlee Burpee and Company	80	97
Cucumber	Straight 8	W. Atlee Burpee and Company	80	98
Cucumber	Armenian Yard Long	Walmart Gardens/Ferry Morse Seed Co.	80	96
Cucumber	Lemon	Martha Stewart Living Omnimedia Inc.	80	99
Cucumber	Orient Express Burpless Hybrid	New England Seed Company	80	100
Cucumber	Spacemaster	New England Seed Company	80	99
Cucumber	Slicemaster	Comstock, Ferre and Company	80	93
Cucumber	White Wonder	Comstock, Ferre and Company	80	93
Cucumber	Muncher	Livingston Seed Company	80	99
Cucumber	National Pickling	High Mowing Seeds Certified Organic	80	100
Dill	Bouquet	Charles C. Hart Seed Company	60	84
Dill	Dukat	Agway, Inc.	60	70
Dill	Mammoth	W. Atlee Burpee and Company	60	71
Dill	Bouquet	Walmart Gardens/Ferry Morse Seed Co.	60	72

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Dill	Mammoth	Martha Stewart Living Omnimedia Inc.	60	72
Dill	Mammoth	Comstock, Ferre and Company	60	76
Dill	Bouquet	High Mowing Seeds Certified Organic	70+	65
Eggplant	Black Beauty	Charles C. Hart Seed Company	60	61
Eggplant	High Bush Select	Agway, Inc.	60	78
Eggplant	Bambino	W. Atlee Burpee and Company	60	73
Eggplant	Rosa Bianca	Martha Stewart Living Omnimedia Inc.	60	62
Eggplant	Black Beauty	American Seed	60	79
Eggplant	Black Beauty	New England Seed Company	60	77
Eggplant	Long Purple	Comstock, Ferre and Company	60	50
Eggplant	Black Beauty	High Mowing Seeds Certified Organic	80	77
Endive	Broadleaf	Charles C. Hart Seed Company	70	85
Endive	Green Ruffle	Agway, Inc.	70	97
Endive	Green Curled	Martha Stewart Living Omnimedia Inc.	70	97
Endive	Batavian Full Heart	New England Seed Company	70	93
Endive	Fin de Louvier	Comstock, Ferre and Company	70	90
Kale	Blue Scotch	Agway, Inc.	75	95
Kale	Vates Dwarf Blue Curled	W. Atlee Burpee and Company	75	95
Kale	Red Russian	Martha Stewart Living Omnimedia Inc.	75	92
Kale	Red Russian	Comstock, Ferre and Company	75	91
Kale	Dinosaur Lacinato	High Mowing Seeds Certified Organic	80+	95
Kohlrabi	White Vienna	Agway, Inc.	75	92
Kohlrabi	Early White Vienna	Walmart Gardens/Ferry Morse Seed Co.	75	91
Kohlrabi	Early White Vienna	Martha Stewart Living Omnimedia Inc.	75	79
Kohlrabi	Early White Vienna	American Seed	75	95
Kohlrabi	Winner Hybrid	New England Seed Company	75	95
Leek	American Flag	Charles C. Hart Seed Company	60	96
Leek	Carina	Agway, Inc.	60	87
Leek	Broad London	Martha Stewart Living Omnimedia Inc.	60	94
Leek	American Broad Flag	New England Seed Company	60	98
Leek	American Flag	Comstock, Ferre and Company	60	97
Lettuce	Oakleaf	Charles C. Hart Seed Company	80	97
Lettuce	Buttercrunch	Charles C. Hart Seed Company	80	94
Lettuce	Red Salad Bowl	Charles C. Hart Seed Company	80	94
Lettuce	Parris Island Cos	Agway, Inc.	80	99
Lettuce	Summertime	Agway, Inc.	80	99
Lettuce	Black Seeded Simpson	Excel Seeds	80	89
Lettuce	Crispy Frills	W. Atlee Burpee and Company	80	85
Lettuce	Iceberg A	W. Atlee Burpee and Company	80	90
Lettuce	Great Lakes #118	Walmart Gardens/Ferry Morse Seed Co.	80	92
Lettuce	Parris White Cos	Martha Stewart Living Omnimedia Inc.	80	99
Lettuce	Butterhead Bibb Blend	Martha Stewart Living Omnimedia Inc.	80	99
Lettuce	Iceberg	Martha Stewart Living Omnimedia Inc.	80	87
Lettuce	Black Seeded Simpson	Martha Stewart Living Omnimedia Inc.	80	97

Table I (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Lettuce	Iceberg	American Seed	80	98
Lettuce	Grand Rapids	American Seed	80	97
Lettuce	Oakleaf	New England Seed Company	80	88
Lettuce	Great Lakes	New England Seed Company	80	70
Lettuce	Red Romaine	Carolina Seeds, Division of New England Seed	85+	94
Lettuce	Freckles	Carolina Seeds, Division of New England Seed	82+	86
Lettuce	Red Sails	Carolina Seeds, Division of New England Seed	95+	97
Lettuce	Simpson Elite	Livingston Seed Company	80	83
Lettuce	Royal Red Leaf	Livingston Seed Company	80	85
Lettuce	Black Seeded Simpson	Livingston Seed Company	80	83
Lettuce	Rouge de Hiver	High Mowing Seeds Certified Organic	80	85
Mesclun	Sweet Salad Mix	W. Atlee Burpee and Company	80	91
Mustard	Southern Curled	Charles C. Hart Seed Company	75	92
Mustard	Florida Broadleaf	Excel Seeds	75	96
Mustard	India Southern Giant Curled	Walmart Gardens/Ferry Morse Seed Co.	75	99
Mustard	Green Wave	New England Seed Company	75	89
Mustard	Florida Broadleaf	Comstock, Ferre and Company	75	100
Mustard	Mizuna	High Mowing Seeds Certified Organic	80+	98
New Zealand spinach		Charles C. Hart Seed Company	40	65
Okra	Clemson Spineless	Charles C. Hart Seed Company	50	97
Okra	Baby Bubba Hybrid	W. Atlee Burpee and Company	50	94
Okra	Clemson Spineless	New England Seed Company	50	95
Onion	White Portugal	Charles C. Hart Seed Company	70	87
Onion	Sweet Spanish Yellow	Charles C. Hart Seed Company	70	87
Onion	Long White Bunching	Agway, Inc.	70	95
Onion	White Lisbon	Excel Seeds	70	86
Onion	Utah Sweet Spanish Jumbo	Walmart Gardens/Ferry Morse Seed Co.	70	91
Onion	Granex Yellow Hybrid	Martha Stewart Living Omnimedia Inc.	70	92
Onion	Evergreen Long White Bunching	Martha Stewart Living Omnimedia Inc.	70	95
Onion	Red Burgermaster	New England Seed Company	70	76
Onion	Sweet Spanish Yellow	Comstock, Ferre and Company	70	89
Onion	Evergreen Bunching	Livingston Seed Company	70	95
Onion	Riverside	High Mowing Seeds Certified Organic	80+	90
Parsley	Italian Plain Leaf	Charles C. Hart Seed Company	60	86
Parsley	Italian Plain Leaf	Agway, Inc.	60	93
Parsley	Extra Curled Dwarf	W. Atlee Burpee and Company	60	83
Parsley	Plain	Walmart Gardens/Ferry Morse Seed Co.	60	86
Parsley	Extra Curled Dwarf	Martha Stewart Living Omnimedia Inc.	60	85
Parsley	Italian Dark Green	Carolina Seeds, Division of New England Seed	88+	82
Parsley	Italian Dark Green	Comstock, Ferre and Company	60	84
Parsley	Italian Flat Leaf	High Mowing Seeds Certified Organic	70+	82

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Parsnip	All American	Agway, Inc.	60	83
Parsnip	All American	New England Seed Company	60	80
Pea	Oregon Sugar Pod	Charles C. Hart Seed Company	80	99
Pea	Mammoth Melting Sugar	Charles C. Hart Seed Company	80	84
Pea	Green Arrow	Charles C. Hart Seed Company	80	81
Pea	Tall Telephone	Charles C. Hart Seed Company	80	88
Pea	Wando	Agway, Inc.	80	94
Pea	Little Marvel	Excel Seeds	80	91
Pea	Burpeeana Early	W. Atlee Burpee and Company	80	97
Pea	Alaska	Walmart Gardens/Ferry Morse Seed Co.	80	94
Pea	Sugar Star	Walmart Gardens/Ferry Morse Seed Co.	80	97
Pea	Dwarf Gray Sugar	Martha Stewart Living Omnimedia Inc.	80	99
Pea	Sugar Snap	Martha Stewart Living Omnimedia Inc.	80	88
Pea	Laxton's Progress	New England Seed Company	80	94
Pea	Dwarf Gray Sugar	New England Seed Company	80	95
Pea	Green Arrow	Comstock, Ferre and Company	80	96
Pea	Mammoth Melting Sugar	Comstock, Ferre and Company	80	91
Pea	Sugar Snap	Livingston Seed Company	80	95
Pea	Sugar Snap	High Mowing Seeds Certified Organic	80	77
Pepper	Cayenne Large Red	Charles C. Hart Seed Company	55	52
Pepper	Jalapeno	Charles C. Hart Seed Company	55	81
Pepper	California Wonder	Charles C. Hart Seed Company	55	85
Pepper	Cubanelle	Charles C. Hart Seed Company	55	66
Pepper	Hot Pepper Mix, 5 Varieties	Agway, Inc.	55	88
Pepper	Staddon's Select	Agway, Inc.	55	95
Pepper	Chili Jalapeno	Excel Seeds	55	80
Pepper	California Wonder	Excel Seeds	55	60
Pepper	Cayenne Long Slim Red	W. Atlee Burpee and Company	55	49
Pepper	California Wonder, Organic	W. Atlee Burpee and Company	55	89
Pepper	Chinese Giant	W. Atlee Burpee and Company	55	75
Pepper	Serrano Chili	Walmart Gardens/Ferry Morse Seed Co.	55	79
Pepper	Sweet Banana	Walmart Gardens/Ferry Morse Seed Co.	55	75
Pepper	Jalapeno M	Walmart Gardens/Ferry Morse Seed Co.	55	71
Pepper	Carnival Mix	Martha Stewart Living Omnimedia Inc.	55	82
Pepper	Habanero	Martha Stewart Living Omnimedia Inc.	55	65
Pepper	Jalapeno M	Martha Stewart Living Omnimedia Inc.	55	85
Pepper	Golden Calwonder	New England Seed Company	55	67
Pepper	Cayenne Large Red	New England Seed Company	55	55
Pepper	Red Cherry Hot	New England Seed Company	55	54
Pepper	Caribbean Red Habanero	Carolina Seeds, Division of New England Seed	90+	68*
Pepper	Chocolate Beauty	Carolina Seeds, Division of New England Seed	92+	89
Pepper	Ancho	Comstock, Ferre and Company	55	65
Pepper	Hungarian Hot Wax	Comstock, Ferre and Company	55	87
Pepper	California Wonder	Comstock, Ferre and Company	55	80
Pepper	California Wonder	Livingston Seed Company	55	75
Pepper	Jalapeno	Livingston Seed Company	55	92
Pepper	Early Jalapeno	High Mowing Seeds Certified Organic	80+	36*
Pepper	King of the North	High Mowing Seeds Certified Organic	80+	79

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Pumpkin	Connecticut Field	Charles C. Hart Seed Company	75	84
Pumpkin	Small Sugar	Charles C. Hart Seed Company	75	90
Pumpkin	Baby Pam	Carolina Seeds, Division of New England Seed	93+	92
Pumpkin	Atlantic Giant	Comstock, Ferre and Company	75	68
Radish	White Icicle	Charles C. Hart Seed Company	75	98
Radish	Black Spanish Round	Charles C. Hart Seed Company	75	91
Radish	Early Scarlet Globe	Excel Seeds	75	97
Radish	Cherry Belle	New England Seed Company	75	97
Radish	French Breakfast	Comstock, Ferre and Company	75	93
Radish	Cherry Belle	Livingston Seed Company	75	95
Radish	Cherry Belle	High Mowing Seeds Certified Organic	80+	83
Rocket		W. Atlee Burpee and Company	80	85
Rocket		New England Seed Company	80	96
Rocket		High Mowing Seeds Certified Organic	80	94
Rutabaga	Improved Purple Top Yellow	New England Seed Company	80+	99
Rutabaga	Improved Purple Top	Comstock, Ferre and Company	75	86
Sage		Charles C. Hart Seed Company	60	91
Sage		High Mowing Seeds Certified Organic	70+	78
Spinach	Bloomsdale	Charles C. Hart Seed Company	60	79
Spinach	Winter Bloomsdale	Agway, Inc.	60	86
Spinach	Bloomsdale Longstanding	Excel Seeds	60	83
Spinach	Bloomsdale Longstanding	Martha Stewart Living Omnimedia Inc.	60	94
Spinach	Melody Hybrid	New England Seed Company	60	92
Spinach	Melody	Comstock, Ferre and Company	60	92
Spinach	Bloomsdale Longstanding	Livingston Seed Company	60	90
Spinach	Winter Bloomsdale	High Mowing Seeds Certified Organic	80+	82
Squash	Waltham Butternut	Charles C. Hart Seed Company	75	68
Squash	Early Crookneck	Charles C. Hart Seed Company	75	93
Squash	Garden Spineless	Charles C. Hart Seed Company	75	73
Squash	Puritan Butternut	Agway, Inc.	75	93
Squash	Summer Blend Mix	Agway, Inc.	75	92
Squash	Burpee's Hybrid Zucchini	W. Atlee Burpee and Company	75	86
Squash	Early Summer Crookneck, Organic	W. Atlee Burpee and Company	75	97
Squash	Waltham Butternut	Walmart Gardens/Ferry Morse Seed Co.	75	69
Squash	Elite Hybrid Zucchini	Walmart Gardens/Ferry Morse Seed Co.	75	99
Squash	Early Prolific Straightneck	Walmart Gardens/Ferry Morse Seed Co.	75	97
Squash	Spaghetti	Martha Stewart Living Omnimedia Inc.	75	91
Squash	Ambassador Hybrid	New England Seed Company	75	98
Squash	Spaghetti	New England Seed Company	75	96
Squash	Tromba d'Albegna	Comstock, Ferre and Company	75	84
Squash	Cream of the Crop Acorn	Comstock, Ferre and Company	75	94
Squash	Zucchini Dark	Livingston Seed Company	75	53*
Squash	Black Beauty	High Mowing Seeds Certified Organic	80+	84

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Swiss chard	Bright Lights	Charles C. Hart Seed Company	65	78
Swiss chard	Bright Lights	Agway, Inc.	65	78
Swiss chard	Large Ribbed Dark Green	Walmart Gardens/Ferry Morse Seed Co.	65	92
Swiss chard	Fordhook Giant	Martha Stewart Living Omnimedia Inc.	65	78
Swiss chard	Giant Lucullus	New England Seed Company	65	67
Swiss chard	Giant Lucullus	Comstock, Ferre and Company	65	74
Swiss chard	Fordhook Giant	Livingston Seed Company	65	84
Swiss chard	Rainbow	High Mowing Seeds Certified Organic	80+	76
Tomatillo	Toma Verde	Martha Stewart Living Omnimedia Inc.	50	94
Tomatillo	Toma Verde	Comstock, Ferre and Company	50	78
Tomato	Better Boy	Charles C. Hart Seed Company	75	79
Tomato	Large Red Cherry	Charles C. Hart Seed Company	75	91
Tomato	Roma VF	Agway, Inc.	75	88
Tomato	Super Beefsteak	W. Atlee Burpee and Company	75	91
Tomato	Yellow Perfection, Organic	W. Atlee Burpee and Company	75	91
Tomato	Brandywine Red, Organic	W. Atlee Burpee and Company	75	91
Tomato	Marglobe	W. Atlee Burpee and Company	75	81
Tomato	Rutgers	Walmart Gardens/Ferry Morse Seed Co.	75	93
Tomato	Red Cherry Large Fruited	Walmart Gardens/Ferry Morse Seed Co.	75	87
Tomato	Yellow Pear	Martha Stewart Living Omnimedia Inc.	75	94
Tomato	Early Girl	New England Seed Company	75	92
Tomato	Big Boy Hybrid	New England Seed Company	75	89
Tomato	Supersteak	Carolina Seeds, Division of New England Seed	87+	79
Tomato	Sweet Million	Carolina Seeds, Division of New England Seed	92+	93
Tomato	Viva Italia	Carolina Seeds, Division of New England Seed	89+	90
Tomato	Long Keeper	Comstock, Ferre and Company	75	89
Tomato	Oxheart	Comstock, Ferre and Company	75	87
Tomato	Crimson Cushion Beefsteak	Livingston Seed Company	75	76
Tomato	Mountain Princess	High Mowing Seeds Certified Organic	80+	94
Turnip	Yellow Globe	Charles C. Hart Seed Company	80	97
Turnip	Seven Top Greens	Excel Seeds	80	96
Turnip	Purple Top White Globe	Walmart Gardens/Ferry Morse Seed Co.	80	99
Turnip	Purple Top White Globe	Martha Stewart Living Omnimedia Inc.	80	99
Turnip	Purple Top White Globe	New England Seed Company	80	99
Turnip	Golden Globe	Comstock, Ferre and Company	80	99
Watercress		Comstock, Ferre and Company	40	79
Watermelon	Jubilee	Carolina Seeds, Division of New England Seed	90+	98
Watermelon	Kleckley's Sweet	Comstock, Ferre and Company	75+	96
Watermelon	Sugar Baby	High Mowing Seeds Certified Organic	80+	96

Table 2. Summary for each seed company of total number of germination claims and the percentage that met or failed label claims.

Seed Company	Total Number of Claims	% Meeting Claims	% Not Meeting Claims
Agway, Inc	35	100	0
American Seed	7	100	0
Carolina Seeds, Division of New England Seed	15	93	7
Charles C. Hart Seed Company	51	98	2
Comstock-Ferre and Company	44	100	0
Excel Seeds	13	100	0
High Mowing Seeds Certified Organic	24	96	4
Livingston Seed Company	18	95	5
Martha Stewart Living Omnimedia, Inc.	35	100	0
New England Seed Company	39	100	0
W. Atlee Burpee and Company	34	100	0
Walmart/Ferry-Morse Seed Company	27	100	0

Table 3. Summary by vegetable type of number of samples tested, average percent germination found, and germination standards. Standards are provided for by the rules and regulations of the Federal Seed Act.

Plant	Samples Tested	Standard	Average Germination
Asparagus	1	70	89
Asparagus bean	1	75	99
Bean	16	70	94
Bean, lima	4	70	80
Beet	11	65	91
Broccoflower	1	75	97
Broccoli	8	75	96
Broccoli raab	2	75	90
Brussels sprouts	3	70	89
Cabbage	7	75	92
Cantaloupe	5	75	99
Carrot	16	55	79
Cauliflower	3	75	90
Celery	2	55	84
Chicory	2	65	85
Chinese cabbage	4	75	89
Collards	6	80	91
Corn	14	75	96
Cornsalad	1	70	77
Cowpea	1	75	93
Cucumber	15	80	97
Dill	7	60	73
Eggplant	8	60	70
Endive	5	70	92
Kale	5	75	94
Kohlrabi	5	75	90
Leek	5	60	94
Lettuce	24	80	91
Mesclun	1	80	91
Mustard	6	75	96
New Zealand spinach	1	40	65
Okra	3	50	95
Onion	11	70	89
Parsley	8	60	85
Parsnip	2	60	81
Pea	17	80	92
Pepper	29	55	73
Pumpkin	4	75	83
Radish	7	75	93
Rocket	3	80	92
Rutabaga	2	75	92
Sage	2	60	84
Spinach	8	60	87
Squash	17	75	86
Swiss chard	8	65	78
Tomatillo	2	50	86
Tomato	19	75	88
Turnip	6	80	98
Watercress	1	40	79
Watermelon	3	70	97

Table 4. Germination and purity of lawn seed. Results for purity and germination are for seeds separated by genus and not by species or variety are reported for that genus. Tolerance (Tol) is calculated according to the rules for seed testing published by the Association of Official Seed Analysts (AOSA). Variance (Var) is calculated as Purity Found (Pur F) minus Purity Claimed (Pur C). Germination Claimed (Germ C); Germination Found (Germ F). * = Does not meet label claim.

Seed Company/Seed Mixture	Pur C	Pur F	Var	Tol		Germ C	Germ F	
Southern States Co-op. Inc. *Agway Landscapers Mix*								
Kentucky Bluegrass	13.42	15.83	2.41	1.86	*	80	84	
Perennial Ryegrass	67.09	68.23	1.14	3.34		90	88	
Creeping Red Fescue	14.79	10.85	-.394	2.36	*	85	93	
Southern States Co-op. Inc. *Agway Sun and Shade Mix*								
Kentucky Bluegrass	17.69	18.49	1.60	2.07		80	77	
Continental Perennial Ryegrass	34.10					90	94	
NP 60 Perennial Ryegrass	24.32					90	94	
total ryegrass	58.42	57.79	-1.25	4.19				
Chewings Fescue	9.88					85	88	
Creeping Red Fescue	9.81					85	88	
total fine fescue	19.69	18.63	-2.13	2.76				
Pure seed	95.80	94.02 *						
Inert matter	3.40	5.88 *						
Lebanon Seaboard Corp. *Mackey's Athletic Mixture*								
Bordeaux Kentucky Bluegrass	9.77	12.77	3.00	1.45	*	85	87	
Affirmed Perennial Ryegrass	9.86	12.57	2.71	2.77		90	93	
Picasso Tall Fescue	39.70					85	81	
Titan 2 Tall Fescue	39.54					85	81	
total tall fescue	79.24	73.18	-6.06	2.62	*			
Lebanon Seaboard Corp. *Mackey's Premium Finest Mixture*								
Bordeaux Kentucky Bluegrass	24.42	27.01	2.59	2.90		85	77	
Affirmed Perennial Ryegrass	29.59					90	96	
Exacta Perennial Ryegrass	29.29					90	96	
total ryegrass	58.88	57.59	-1.29	4.53				
Creeping Red Fescue	14.79	11.52	-3.27	2.36	*	85	83	
Pure seed	98.09	96.12 *						
Inert matter	1.42	3.88 *						
Blue Seal Feeds Inc. *Blue Seal Early Green Lawn Mixture*								
Kentucky Bluegrass	14.91	19.49	4.58	2.07	*	85	87	
Perennial Ryegrass	48.64					85	92	
Annual Ryegrass	9.88					90	92	
total ryegrass	58.52	55.94	-2.58	4.19				
Creeping Red Fescue	24.73	22.00	-2.73	2.96		85	95	
Blue Seal Feeds Inc. *Blue Seal Classic Lawn Mixture*								
Kentucky Bluegrass	34.76	41.82	7.06	3.94	*	90	89	
Accent Perennial Ryegrass	19.55					90	95	
All-Star Perennial Ryegrass	19.34					90	95	
total ryegrass	38.89	37.91	-0.98	5.38				
Creeping Red Fescue	24.37	17.46	-6.91	4.12	*	91	68	*
Inert matter	1.23	2.72 *						

Table 4 (continued). Germination and purity of lawn seed. Results for purity and germination are for seeds separated by genus and not by species or variety are reported for that genus. Tolerance (Tol) is calculated according to the rules for seed testing published by the Association of Official Seed Analysts (AOSA). Variance (Var) is calculated as Purity Found (Pur F) minus Purity Claimed (Pur C). Germination Claimed (Germ C); Germination Found (Germ F). * = Does not meet label claim.

Seed Company/Seed Mixture	Pur C	Pur F	Var	Tol		Germ C	Germ F	
Jonathan Green Inc. *Jonathan Green Fall Magic Grass Seed Mixture*								
Jefferson Kentucky Bluegrass	6.88	16.64	9.76	1.47	*	90	81	
Plymouth Perennial Ryegrass	32.45	23.74	-8.71	3.72	*	92	86	
Carmen Chewings Fescue	9.83					90	83	
Salem Creeping Red Fescue	9.80					90	83	
total fine fescue	19.63	18.67	-0.96	2.76				
Sante Fe Tall Fescue	19.75					90	87	
Black Magic Tall Fescue	19.75					90	87	
total tall fescue	39.50	37.19	-2.31	4.32				
Pure seed	98.46	96.24	*					
Inert matter	1.46	3.76	*					
Pennington Seed Inc. *Pennington Professional Select Northeast Mixture*								
Clearwater Kentucky Bluegrass	9.50	12.83	3.33	1.50	*	80	85	
Applaud Perennial Ryegrass	49.00	53.46	4.46	3.83	*	90	87	
Boreal Red Fescue	19.00					80	78	
Magic Chewings Fescue	19.00					80	78	
total fine fescue	38.00	32.10	-5.90	3.40	*			
The Scott's Company *Scott's Classic Landscapers' All Purpose Mix*								
Kenblue Kentucky Bluegrass	24.35	28.35	4.00	3.02	*	85	83	
Gulf Perennial Ryegrass	23.38					90	95	
Allaire II Perennial Ryegrass	16.53					90	95	
Enchanted Perennial Ryegrass	8.80					90	95	
total ryegrass	48.71	48.20	-0.51	4.66				
Boreal Creeping Red Fescue	24.35	20.95	-3.40	3.54		85	83	
Loft's Seed Inc. *Loft's All Perennial Landscape Mix*								
Kentucky Bluegrass	12.75	17.38	4.63	1.87	*	80	75	
Perennial Ryegrass	57.60	55.78	-1.82	4.19		85	91	
Creeping Red Fescue	24.65	23.61	-1.04	3.04		90	78	*
New England Seed Company *New England Shade*								
Nexus Perennial Ryegrass	19.55	21.50	1.95	3.45		90	91	
Creeping Red Fescue	29.55					85	80	
Chewings Fescue	29.53					85	80	
total fine fescue	59.08	56.92	-2.16	3.79				
Genesis Tall Fescue	19.96	19.88	-0.08	3.35		85	84	
Lesco, Inc. *Lesco Eagle and Blue Mixture*								
Shamrock Kentucky Bluegrass	27.41	31.49	4.08	3.32	*	90	87	
Pacesetter Perennial Ryegrass	24.10					90	90	
Allsport Perennial Ryegrass	23.58					90	90	
Linedrive Perennial Ryegrass	22.69					90	90	
total ryegrass	70.37	66.91	-3.46	3.68				

Table 4 (continued). Germination and purity of lawn seed. Results for purity and germination are for seeds separated by genus and not by species or variety are reported for that genus. Tolerance (Tol) is calculated according to the rules for seed testing published by the Association of Official Seed Analysts (AOSA). Variance (Var) is calculated as Purity Found (Pur F) minus Purity Claimed (Pur C). Germination Claimed (Germ C); Germination Found (Germ F). * = Does not meet label claim.

Seed Company/Seed Mixture	Pur C	Pur F	Var	Tol		Germ C	Germ F	
Lesco, Inc. *Lesco Suburban Sun and Shade Mixture*								
Wellington Kentucky Bluegrass	9.91	12.51	2.60	1.47	*	90	86	
Linedrive Perennial Ryegrass	39.04					90	96	
Midway Intermediate Perennial Ryegrass	29.58					90	96	
total ryegrass	68.62	69.64	1.02	3.34	*			
Creeping Red Fescue	19.78	16.83	-2.95	2.76	*	90	68	*
The Charles C. Hart Seed Co. *Holdridge Custom Lawn Seed Mixture*								
Kentucky Bluegrass	13.35	14.70	1.35	1.87		80	79	
Blazer 4 Perennial Ryegrass	34.58					90	87	
Fiesta 3 Perennial Ryegrass	14.74					90	87	
total ryegrass	49.32	50.91	1.59	4.17				
Creeping Red Fescue	34.14	29.31	-4.83	3.29	*	85	91	
Pure seed	96.81	94.92 *						
Inert matter	2.93	5.08 *						
The Charles C. Hart Seed Co. *Holdridge Quick Grow*								
Perennial Ryegrass	9.83					90	97	
Annual Ryegrass	78.56					90	97	
total ryegrass	88.39	88.25	-0.14	2.19				
Creeping Red Fescue	9.80	10.04	0.24	2.06		85	76	
Crop seed	0.18	1.07 *						
New England Seed Co. *CT Farm Athletic*								
Perennial Ryegrass	14.98	13.21	-1.77	2.51		90	96	
Creeping Red Fescue	29.83	32.83	3.00	3.14		85	85	
Kentucky 31 Tall Fescue	44.83					85	86	
Cochise II Tall Fescue	9.77					85	86	
total tall fescue	54.60	51.17	-3.43	3.60				
Pure seed	99.41	97.21 *						
Crop seed	0.04	1.29 *						
Inert matter	0.49	1.50 *						

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Table 5. Germination and purity of crop seed. Germination Claimed (Germ Claim); Germination Found (Germ Found); * failed label claim.

Seed Mixture	Seed Company	Purity Claim	Purity Found	Germ Claim	Germ Found
Huron Brand Seed Rye	Agriculver, Inc.	98.00	99.83	85	94
CPS Rye	Crop Production Services	99.60	99.30	75	90
Buckwheat	Southern States Co-op	99.00	99.97	85	97
Common White Wheat	ASP Ag Products	97.00	95.90	85	83
	Weed Seed	0.60	2.67*		
Huron Brand Seed Rye	Agriculver Inc.	98.00	99.99	85	90

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